

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-14. (Canceled).

15. (Previously Presented) A method of monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said method comprising the steps of:

- a) measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure by means of sensors mounted on said enclosure,
 - b) determining said proportion by processing the measured values of pressure, temperature and density in a data-processing unit,
- wherein step a) is carried out without tapping said gas mixture.

16. (Previously Presented) The method according to claim 15, in which said electrical switchgear enclosure is a high-voltage switchgear.

17. (Previously Presented) The method according to claim 15, in which said electrical switchgear enclosure is a gastight enclosure.

18. (Previously Presented) The method according to claim 15, in which said proportion of a component in the mixture is calculated by the data-processing unit which is programmed to solve the thermodynamic state equations of said components.

19. (Previously Presented) A method according to claim 15, in which said proportion of a component in the mixture is determined by the data-processing unit which stores a data table in

a memory, said data table containing a plurality of data items representative of various proportions of said component in correspondence with data items representative of various measurements of the pressure, of the temperature, and of the density of the gas mixture containing said component.

20. (Currently Amended) ~~A method of monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said method comprising the steps of:~~

~~a) measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure by means of sensors mounted on said enclosure, one of said sensors being a vibrating blade sensor,~~

~~b) determining said proportion by processing the measured values of pressure, temperature and density in a data processing unit,~~

~~wherein step a) is carried out without tapping said gas mixture, and The method according to claim 15, wherein the density is measured by means of said a vibrating-blade sensor.~~

21. (Currently Amended) ~~A method of monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said method comprising the steps of:~~

~~a) measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure by means of sensors mounted on said enclosure, one of said sensors being a capacitor whose capacitance is a function of the permittivity of the gas mixture,~~

~~b) determining said proportion by processing the measured values of pressure, temperature and density in a data processing unit,~~

~~wherein step a) is carried out without tapping said gas mixture, and The method according to claim 15, wherein the density is measured by means of said a capacitor whose capacitance is a function of the permittivity of the gas mixture.~~

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22. (Currently Amended) ~~A method of monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said method comprising the steps of:~~

~~a) measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure by means of sensors mounted on said enclosure, one of said sensors being an interferometer,~~

~~b) determining said proportion by processing the measured values of pressure, temperature and density in a data processing unit,~~

~~wherein step a) is carried out without tapping said gas mixture, and~~ The method according to claim 15, wherein the density is measured by means of said an interferometer.

23. (Previously Presented) A method according to claim 18, in which the data-processing unit is a microcomputer.

24. (Previously Presented) A method according to claim 18, in which the data-processing unit is formed by microprocessors or microcontrollers.

25. (Previously Presented) Electrical switchgear provided with an enclosure containing a mixture of at least two dielectric gases under pressure, wherein the proportions of the dielectric gases in the mixture are determined by implementing a method according to claim 15.

26. (Previously Presented) Electrical switchgear according to claim 25, wherein the electrical switchgear enclosure is a high-voltage switchgear.

27. (Previously Presented) Electrical switchgear according to claim 25, wherein electrical switchgear enclosure is a gastight enclosure.

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28. (Previously Presented) Electrical switchgear provided with an enclosure containing a gaseous mixture of at least two dielectric gases under pressure, wherein the proportion of one of these dielectric gases in the mixture is determined by implementing a method comprising the steps of:

a) measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure by means of sensors mounted on said enclosure,

b) determining said proportion by processing the measured values of pressure, temperature and density in a data-processing unit,

wherein step a) is carried out without tapping said gas mixture, and wherein the gas mixture is made up of two components constituted by N_2 and SF_6 or by CF_4 and SF_6 .

29. (Previously Presented) A method of monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said method comprising the steps of:

a) measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure by means of sensors mounted on said enclosure,

b) determining said proportion by processing the measured values of pressure, temperature and density in a data-processing unit, and

c) running algorithms in the data-processing unit for correcting errors and drift specific to said sensors,

wherein step a) is carried out without tapping said gas mixture.

30. (Previously Presented) A system for monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said system comprising:

at least one sensor mounted on said enclosure for measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure, said sensor measuring without tapping the said gas mixture, and

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a data processing unit for processing the measured values of pressure, temperature and density.

31. (Previously Presented) A system for monitoring the proportion of a component in a gaseous mixture, said gaseous mixture having at least two components and being contained in an electrical switchgear enclosure, said system comprising:

first means mounted on said enclosure for measuring the pressure, the temperature, and the density of the gas mixture contained in the electrical switchgear enclosure, said first means measuring without tapping said gas mixture, and

second means for processing the measured values of pressure, temperature and density.

32. (Previously Presented) A method according to claim 15, in which said gaseous mixture acts as an insulation gas in the electrical switchgear.